

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claim 1 (Currently Amended) A bipolar separator for a fuel cell stack, comprising:

a cathode sheet and an anode sheet, at least one of said sheets provided with fluid passage holes[[.]];

at least one corrugated conductive element,

wherein said cathode sheet and said anode sheet sheets are welded or metallurgically bonded through said at least one corrugated conductive element, and wherein a cooling fluid passage is formed between the corrugated conductive element and at least one of said cathode sheet and anode sheet said sheets delimit a passage section of a cooling fluid.

Claim 2 (Original) The separator of claim 1, wherein said fluid passage holes are gas feed and/or discharge holes disposed in one or more peripheral regions of said at least one sheet.

Claim 3 (Currently Amended) The separator of claim 1 wherein said fluid passage holes comprise calibrated orifices for feeding a flow of said cooling fluid to the fuel cells a fuel cell adjacent to the separator.

Claim 4 (Previously Presented) The separator of claim 1 wherein said at least one corrugated conductive element adjoins said cathode and anode sheets generally along the whole surface of the separator and said cooling fluid passage section comprises channels delimited by the surface of said corrugated conductive element.

Claim 5 (Previously Presented) The separator of claim 1 wherein said at least one corrugated conductive element adjoins said cathode and anode sheets only in one or more peripheral regions of the separator.

Claim 6 (Original) The separator of claim 5 wherein said cooling fluid passage section comprises at least one reticulated element interposed between said cathode sheet and said anode sheet.

Claim 7 (Original) The separator of claim 6 wherein said at least one reticulated element is an electrically conductive, optionally metallic element.

Claim 8 (Original) The separator of claim 7 wherein said at least one conductive reticulated element is selected from the group consisting of metal foams, metal meshes, expanded sheets and sintered metallic materials.

Claim 9 (Previously Presented) The separator of claim 1 wherein at least one of said anode and cathode sheets comprises a sealing gasket secured to the side

opposite to the one whereto said corrugated conductive element is welded or metallurgically bonded.

Claim 10 (Previously Presented) The separator of claim 1 wherein at least one of said anode and cathode sheets comprises a current collector welded or metallurgically bonded to the side opposite to the one whereto said corrugated conductive element is welded or metallurgically bonded.

Claim 11 (Original) The separator of claim 10 wherein said current collector is an electrically conductive reticulated element optionally selected from the group consisting of metal foams, metal meshes, expanded sheets and sintered metallic materials.

Claim 12 (Previously Presented) A fuel cell stack comprising at least one separator of claim 1.

Claim 13 (Original) The stack of claim 12 comprising at least one feed or discharge duct in communication with said fluid passage holes.

Claim 14 (Canceled)

Claim 15 (New) The separator of claim 1, wherein the fluid passage holes in said anode and/or said cathode sheet are gas feed and/or discharge holes located only in one or more peripheral regions.

Claim 16 (New) The separator of claim 1, further comprising a reticulated element interposed between said anode sheet and said cathode sheet, forming a cooling fluid passage between said anode sheet and cathode sheet, wherein at least one of said anode sheet and said cathode sheet has fluid passage holes in a region in contact with the reticulated element.